

**PROCEDURES FOR THE VERIFICATION OF CRITICAL  
DIMENSIONS OF HYDROMETERS BULBS  
AASHTO T 88**

**A. PURPOSE**

This method is intended to provide instruction for verifying the critical dimensions of hydrometer bulb and composite correction for hydrometer bulb.

**B. APPARATUS REQUIRED**

1. Calibrated thermometer (0 °C - 100 °C) readable to 0.1 °C
2. Calibrated calipers readable to 0.001 inch (.025 mm)
3. One (1) 1000 ml sedimentation cylinder
4. Distilled or demineralized water
5. Type 152H hydrometer bulb

**C. PROCEDURE**

1. Measure the maximum bulb diameter to the nearest 0.001 inch (.025 mm) and record results.
2. Measure the scale length from 0-50 g/L to the nearest 0.001 inch (.025 mm) and record results.
3. Check scale gradation and record.
4. Fill 1000 ml sedimentation cylinder with distilled or demineralized water to the 1000 ml line. Adjust temperature of the water to 20 °C. Carefully place hydrometer in the water and record results.

**D. TOLERANCE**

Hydrometers shall meet the diameter, scale length, scale gradation and hydrometer reading requirements as specified in T 88, "Particle Size of Analysis of Soils."

## EQUIPMENT VERIFICATION RECORD

Verified By: _____	Date: _____
Equipment: <u>Hydrometer Bulb Type 152H</u>	Location (Lab): <u>Soil Mechanics Lab</u>
Certification No.: _____	Verification Frequency: <u>24 months</u>
Previous Verification Date: _____	Next Due Date: _____
Verification Equipment Used: <u>Calibrated calipers (readable to 0.001 in. [.025 mm]), SN: _____</u>	
<u>Calibrated thermometer (0-100°C), SN: _____</u> <u>Distilled or demineralized water</u>	
Verification Procedure: <u>(In-house) OMR-CVP-11 / AASHTO T 88</u>	

## HYDROMETER BULB MEASUREMENTS

L = \_\_\_\_\_ in. (mm)

L<sub>1</sub> = \_\_\_\_\_ in. (mm)

D = \_\_\_\_\_ in. (mm)

H = \_\_\_\_\_ in. (mm)

H/2 = \_\_\_\_\_ in. (mm)

STEM DIAMETER UNIFORM YES NO

## HYDROMETER BULB CALIBRATION

## TYPE 152H

Reads 0.0 in 20°C (distilled or demineralized water) YES NO

Bulb diameter in inches (1.0201-1.260 in. [30.5-30.6 mm]) YES NO

Scale Length for 0 to 50 grams per liter (3.228-3.307 in. [82-84 mm]) YES NO

Scale graduations from -5 to 60 grams per liter YES NO

Hydrometer Bulb accepted for usage YES NO

